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Final Report

SURVEYS AND INVESTIGATIONS PROJECTS

As Required By

FEDERAL AID IN WILDLIFE RESTORATION ACT

ILLINOIS

Federal Aid Project W-105 - R(6)

STUDY 1: POPULATION STUDIES OF WHITE-TAILED DEER

Job 1 A: Population Data from Harvest

Job 1 B: Hunting Pressure and Harvest Analysis

By

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August 31, 1995

1994 ILLINOIS DEER HARVEST REPORT

STUDY 1 - POPULATION STUDIES OF WHITE-TAILED DEER

STATE OF ILLINOIS

NAME: FOREST WILDLIFE INVESTIGATIONS

PROJECT NO. : W-105-R (6)

TITLE: POPULATION DATA FROM DEER HARVEST

OBJECTIVE: To characterize the status of the deer herds as to age/sex ratio and general condition by county, region and statewide from check station data and analysis of hunting pressure and harvest.

ABSTRACT:

Traditional Firearm Deer Season: The 1994 firearm deer season consisted of one 3-day weekend (November 18-20) and a second 4-day weekend (December 1-4). Harvest information collected at mandatory check stations located in 98 counties open to firearm hunting (Cook, DuPage, Kane and Lake Counties are closed to firearm deer hunting) identified a record harvest of 97,723 deer, which represents an increase of 5,777 (6%) over 1993. A total of 260,302 regular firearm permits were issued; the permit success rate remained constant at 37 percent (permit success was figured utilizing the total number of permits issued -- not to be confused with hunter success which utilizes the number of individual hunters) between 1993 and 1994. Hunters possessing a muzzleloading-only permit accounted for the harvest of an additional 353 deer during the second season of the regular firearm deer season. Tables 1, 2, 3, 4 and Appendix A illustrate permits issued by type, deer harvested by region, age and sex composition of harvest, age composition of the adult male cohort and the county-by-county harvest. To alleviate hunter backlogs at county check stations during the first season, there were an additional eight check stations operated in regions of the state that have had historically high harvests.

Table 1. Illinois Firearm Deer Harvest by Permit Type - 1994

<u>Permit Type *</u>	<u>Permits Issued</u>	<u>Deer Harvested</u>	<u>Permit Success</u>	<u>Percent of Harvest</u>
Full Season E-S	130377	52590	40%	54%
Second Season E-S	18465	4264	23%	4%
Full Season A-O	38511	19113	50%	20%
Second Season A-O	2159	743	34%	**
Free Landowner E-S	31422	7629	24%	8%
Free Landowner A-O	31422	9245	29%	10%
Paid Landowner E-S	5800	2530	44%	3%

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Table 1. Continued.

<u>Permit Type</u>	<u>Permits Issued</u>	<u>Deer Harvested</u>	<u>Permit Success</u>	<u>Percent of Harvest</u>
Paid Landowner A-O	1717	945	55%	1%
Non-Resident E-S	286	108	38%	**
<u>Non-Resident A-O</u>	<u>143</u>	<u>60</u>	<u>42%</u>	<u>**</u>
Total	260,302	97,227***	37%	100%

* E-S represents either-sex permits and A-O represents antlerless-only.

** Represents less than 1% of harvest.

*** Difference in "Deer Harvested" (97,227) and the harvest total of 97,723 is attributed to hunters incorrectly checking in deer under various permit types not listed.

Table 2. ILLINOIS FIREARM HARVEST BY REGION - 1994

<u>Region</u>	<u>Permits</u>	<u>Harvest**</u>	<u>Success*</u>	<u>Change In Success Rate</u>
1	25428	8807	35%(38)	-3%
2	23106	7717	33%(34)	-1%
3	38535	14141	37%(37)	0
4	39218	16683	41%(42)	-1%
5	9289	2841	35%(34)	+1%
6	22302	8815	40%(38)	+2%
7	60202	22192	36%(35)	+1%
<u>8</u>	<u>42222</u>	<u>15345</u>	<u>36%(36)</u>	<u>0</u>
State	260,302	96,541	37%(37)	0

* Figures in parenthesis represent 1993 success rates.

** Harvest figures do not include special hunt areas.

Table 3. SEX AND AGE COMPOSITION OF THE 1994 FIREARM DEER HARVEST

<u>Age</u>	<u>Males</u>	<u>%Males</u>	<u>Females</u>	<u>% Females</u>	<u>Total*</u>	<u>% Total</u>
Fawn	14710	28%	11347	28%	26057	28%
1 1/2	19258	37%	13019	32%	32277	35%
2 1/2	12218	23%	11390	28%	23608	25%
3 1/3	5134	10%	3962	10%	9096	10%
4 1/2	1022	2%	846	2%	1868	2%
4 1/2+	<u>192</u>	<u>**</u>	<u>282</u>	<u>**</u>	<u>474</u>	<u>**</u>
Total	52,534	100%	40,846	100%	93,380	100%

* Does not include deer harvested with no age or sex recorded (3613).

** Less than one percent.

Table 4. AGE COMPOSITION OF 1994 MALE COHORT HARVEST AGED AS YEARLINGS OR OLDER

<u>Age</u>	<u>Total</u>	<u>Percent of Total*</u>
1 1/2	19258	51% (53)
2 1/2	12218	32% (30)
3 1/2	5134	14% (13)
4 1/2	1022	3% (3)
4 1/2+	<u>192</u>	<u>** (1)</u>
Total	37,824	100%

* Figures in parenthesis represent 1993 percentages.

** Less than one percent.

Muzzleloading Deer Season: During December 9-11, 1994, the Department provided for the fourth statewide 3-day Muzzleloading Deer Season. Individuals interested in hunting this distinct and separate season were eligible to apply for an either-sex and an antlerless-only muzzleloading permit and could not apply for a regular firearm permit until after the initial lottery and first random daily drawing. Muzzleloading deer permits were legal to use during the second 4-day season of the traditional firearm season but could not be used during the first 3-day season. There were a total of 3,783 either-sex and 382 antlerless-only permits issued during the 1994 season which represents a

20 percent increase in either-sex and a 14 percent increase in antlerless-only permits issued. A total of 461 deer were harvested during the muzzleloading-only season (with an additional 353 deer taken by muzzleloading weapons during the regular firearm seasons). Seventy percent of the total kill were taken by hunters with muzzleloading-only permits, with the remaining 30 percent harvested by hunters with unfilled landowner permits or by non-resident deer hunters. County-by-county muzzleloading harvest results are illustrated in Appendix B. There was no attempt to calculate overall permit success because it is impossible to determine the number of muzzleloading permit holders who hunted during the regular firearm season or how many unsuccessful landowner permit holders utilized their unfilled permits to hunt during the muzzleloading season.

Table 5. 1994 MUZZLELOADING HARVEST RESULTS BY PERMIT TYPE

<u>Permit Type *</u>	<u>Male</u>	<u>Female</u>	<u>Unk.</u>	<u>Harvest</u>	<u>Percent of Total Harvest</u>
E-S Muzzleloading Permit	155	126	7	288	62%
A-O Muzzleloading Permit	30	7	1	38	8%
E-S Free Landowner Permit	32	24	0	56	12%
A-O Free Landowner Permit	26	49	2	77	17%
E-S Non-Resident Shotgun	1	0	0	1	**
A-O Non-Resident Shotgun	0	1	0	1	**
State Totals	244(53%)	207(45%)	10(2%)	461	100%

* E-S represents either-sex permits and A-O represents antlerless-only permits.

** Represents less than 1% of the harvest.

Handgun Deer Season — Special January Season: A 3-day handgun deer season was held during January (13, 14 and 15), 1995 in 20 counties in Illinois. Definition of a legal handgun and its use consists of the following:

1. A centerfire handgun of .30 caliber or larger with a minimum barrel length of 4 inches. It shall be unlawful to take or attempt to take white-tailed deer by use of semi-automatic handguns or handguns altered to allow for shoulder shooting.
2. The only legal ammunition is any centerfire handgun cartridge of .30 caliber or larger, that is available as a factory load with the published ballistic tables of the manufacturer showing a capacity of at least 500 foot pounds of energy at the muzzle and whose case length does not exceed 1.4 inches. Full-metal jacket bullets cannot be used to hunt white-tailed deer.

3. Examples of legal handgun cartridges are: .30 Caliber Carbine, .357 Magnum, 10mm, .41 Magnum, .44 Magnum, .45 Magnum and .454 Casull. This is not a complete list, but only examples of the more common legal cartridges.

Counties perceived by landowners as having excessive deer numbers and having historical hunter success that exceeded 40 percent were selected for the January 1995 hunting season. A total of 10,204 antlerless-only permits were issued through a randomized lottery drawing. There were 4,946 remaining for all counties at the close of the allocation period. Statewide hunter success was 11 percent, which is the same hunter success as recorded for the 1994 season. Antlerless male and female harvested consisted of 26 percent and 73 percent, respectively (Table 6.).

Table 6. HANDGUN HARVEST RESULTS - JANUARY 1995

<u>County</u>	<u>Permits Issued*</u>		<u>Total Harvest</u>	<u>Hunter Success**</u>	<u>Antlerless Males</u>	<u>Females</u>	<u>Unk.</u>
Adams	659	(1000)	67	10% (13%)	22	45	
Brown	337	(1000)	47	14% (14%)	16	31	
Calhoun	258	(400)	17	7% (7%)	5	12	
Crawford	349	(500)	47	14% (11%)	12	35	
Fulton	549	(1000)	32	6% (8%)	8	24	
Greene	327	(500)	24	7% (5%)	7	15	2
Grundy	280	(300)	29	10% (8%)	10	19	
Jasper	495	(550)	54	11% (14%)	18	36	
Jefferson	363	(1000)	26	7% (10%)	5	21	
JoDaviess	923	(1000)	116	13% (11%)	31	82	3
Johnson	1197	(1400)	125	10% (11%)	30	95	
Lawrence	201	(250)	25	12% (10%)	9	16	
McLean	370	(500)	44	12% (11%)	19	25	
Ogle	1000	(1000)	53	10% (14%)	12	41	
Perry	583	(1000)	65	11% (11%)	16	46	3
Pike	873	(1000)	161	18% (18%)	30	130	1
Randolph	474	(1000)	59	12% (5%)	16	42	1
Union	738	(1000)	78	11% (7%)	12	66	
Wayne	477	(500)	62	13% (13%)	17	45	
<u>Whiteside</u>	<u>214</u>	<u>(250)</u>	<u>15</u>	<u>7% (7%)</u>	<u>4</u>	<u>11</u>	
Total	10,204	(15,150)	1146	11% (11%)	299 (26%)	837 (73%)	10(1%)

* Figures in parenthesis represent county quotas.

** Figures in parenthesis represent hunter success for 1993.

Total includes one female listed as harvested in Jackson County which was not open to handgun hunting.

Archery Deer Season: In counties closed to firearm deer hunting, the 1994-95 archery season consisted of 104 days between 1 October and 12 January. In counties open to firearm deer hunting, the season length consisted of 97 days. Archery hunting hours were from one-half hour before sunrise to one-half hour after sunrise. Archery deer hunting was not allowed during the traditional firearm deer season in counties open to firearm deer hunting. However, archers were allowed to hunt during the muzzleloading season but were required to wear 400 square inches of blaze orange. There were 83,723 unique archers within the state of whom 37,195 desired an additional either-sex permit (Table 7); 14,030 individuals elected to purchase an additional antlerless-only permit; 13,885 landowners received free combination permits consisting of an either-sex permit and an antlerless-only permit and there were 94 non-resident either-sex permits and 38 non-resident antlerless-only permits issued for a total of 162,850 archery permits allocated (an increase of 7 percent over 1993). Archers were required to check their deer in at an archery check station within 48 hours of harvest. Archery harvest results illustrated in Appendix C identify there were 25,586 deer harvested with a male to female sex ratio of 62 and 37 percent respectively.

Table 7. Issuance of 1994 Archery Deer Permits -- By Type.

<u>Permit Type *</u>	<u>Number Issued</u>
First E-S Permit	83723
Second E-S Permit	37195
First A-O	14030
Free Landowner E-S	13885
Free Landowner A-O	13885
Non-Resident E-S	94
<u>Non-Resident A-O</u>	<u>38</u>
Total	162,850

* E-S represents either-sex permits and A-O represents antlerless-only permits.

TECHNIQUES:

It is mandatory that all successful hunters register their deer at one of the check stations established in each county that allows firearm deer hunting (98 of 102 counties in Illinois), archery hunting (legal in all 102 counties) and handgun hunting (legal in 20 of the 102 counties). In an effort to reduce the delay hunters experience while waiting in line to register their deer and associated traffic congestion, the Department established 8 auxiliary check stations in regions of the state with a historically high deer harvest during the first

firearm deer season in an effort to reduce the delay hunters experience and the associated traffic congestion while waiting in line to register their deer. Each hunter receives a list of all check station locations within the state. Hunters are usually no further than 25 miles from a check station location and are required to use the check station in the county for which their permit was issued, or the check station nearest the kill site. Data on sex, age and county of kill is recorded for all deer taken by firearm, along with information on wild turkey sightings and other pertinent information. Data is taken from all kill sheets, entered into a computer file and results tabulated on state computers (also used to analyze population levels via model developed by Southern Illinois University - Carbondale) and utilized in the formulation of future county harvest quotas .

RECOMMENDATIONS:

It is recommended that harvest data be collected in the same manner during the 1995 season(s). Additionally, universities or colleges should be contacted for the purpose of hiring and training check station operators as well as coordinating the distribution and collection of check station harvest data and operational materials. To improve student participation at the aging and check station operational instructional seminars and showing up on time at their assigned check station, it is recommended that a monetary incentive procedure be established, i.e., student check station operators would receive an additional \$25.00 if they attended all the preparatory meetings and showed up at their check station locations on time during the season.

Archery and muzzleloader check station operations should continue using voluntary proprietorships throughout the state to register and record the deer harvest. The Office of Law Enforcement's Conservation Police Officers (CPO's) should be responsible for distributing archery check station materials. Division of Wildlife Resources District Wildlife Biologists (DWB's) and/or Private Land Biologists (PLB's) should be responsible for picking up archery, muzzleloading and handgun harvest sheets within two weeks after the close of the handgun season. Because districts vary in size, the time commitment to accomplish this objective will vary. However, because most check stations should be contacted during the normal weekly routine of DWB's and PLB's, the time commitment should not exceed one day per individual (process will be expedited by confirming pick up date/time with proprietor beforehand).

There is a need to standardize the guidelines the Department follows in authorizing a business the responsibility of serving as a voluntary archery (muzzleloader/handgun) check station. Some areas of concern include: the number of check stations per county, required days/hours check stations are open, and Department justification/procedure to be followed when check stations fail to follow specified guidelines.

In an effort to save personnel time (DWB's/PLB's) the Deer Project will investigate the feasibility of implementing a postage meter at the Petersburg post office which will allow

voluntary check station proprietors to mail harvest results directly to the Deer Project Office, thereby precluding the necessity of picking up check station materials by District personnel.

Archery, muzzleloading and handgun harvest reports need to be completed in a timely fashion; therefore, it recommended that computer entry of these harvest data be bid out in the same fashion as the firearm harvest records.

Due to the gradual erosion of compliance from successful firearm deer hunters in checking their deer into the nearest check station, the Office of Law Enforcement needs to encourage its CPO's to actively enforce the "county of kill or nearest check station" regulation (archers are required to check their deer but not necessarily at the check station closest to the kill site). If the current trend continues to "forgive" hunters traveling a number of counties before checking in their deer, can it be far behind that hunters will begin believing that this law is not being enforced and therefore they will discontinue checking in their deer at all?

With an increasing interest by our constituents to muzzleloader deer hunt, it is recommended that the current quota of either-sex permits be increased on a county-by-county basis so that supply meets demand.

With the enthusiastic public support and the desire for additional handgun deer hunting opportunities, the Department needs to expand the number of counties open to handgun deer hunting. The Illinois deer herd would not be jeopardized by adding counties experiencing high regular deer season hunter success and associated deer depredations concerns.

Attention needs to be given to revising the Wildlife Code to allow for the use of handguns for deer hunting under circumstance other than in a "special hunt" situation. The handgun and muzzleloading season should be continued for an additional year under their current structures to provide the opportunity of the Surveys and Investigations Program to evaluate participation and approval (disapproval) of the constituencies. After this evaluation period, should it be decided to continue these seasons, it is recommended that these seasons be consolidated.

It is recommended that the Department discontinue the current policy of allowing landowners with unfilled regular season free landowner permits to hunt with a muzzleloader during the muzzleloading season. Rationale for the recommendation is that there is absolutely no method of ascertaining how many landowners are taking advantage of this policy, making it impossible to accurately determine statistics for the muzzleloader season. However, if the Department continues the current policy, it is recommended that these permits be converted to antlerless-only permits for the muzzleloading season which would encourage landowners to manage their deer densities for the purpose of alleviating

deer depredation.

It is suggested that the current procedure of precluding non-resident deer hunters the opportunity of applying for a "group hunt" be revised next year in order that up to six hunters may apply as a group. Group hunt opportunities would facilitate non-resident family members and provide non-residents the opportunity to take advantage of the economic incentive afforded when expenses are shared over a number of individuals plus the camaraderie a group hunt offers.

Springfield based administrative staff of the Division of Wildlife Resources and the Division of Land Management need to continue their efforts of increasing the number of state sites providing archery and/or firearm deer hunting opportunities.

It is recommended that standardized hunter harvest/wildlife observation report forms be developed with mandatory reporting required for state owned or managed sites (in particular, on sites managed as "quality deer hunting" sites) currently providing firearm or archery deer hunt opportunities.

As in the past, it is again recommended that a statewide youth hunt be developed for youngsters between the ages of 12 and 16. To alleviate the potential for conflict from the archers and firearm deer hunters, it is recommended this season consist of a two day weekend between the middle and the end of September and be for antlerless-only deer.

With the increasing interest in leasing land for the purpose of hunting, especially deer hunting, it shall become more difficult to prescribe firearm deer permit quotas to adequately control deer densities in regions having large tracks of land "locked up" in hunting lease agreements. In addition to controlling deer densities, there is the very real probability that the average deer hunter (displaced from leased acreage) will become critical of the Department's association with the "Access Illinois Program" which may very well be envisioned as being responsible for their inability to find a place to hunt.

The Forest Wildlife Program is very much in need of additional personnel, specifically a technician. Job description responsibilities would include, but not be limited to, firearm/archery deer check station operational responsibilities, turkey check station/turkey trapping activities and assistance to the urban deer management project.

APPENDIX A

ILLINOIS FIREARM DEER HARVEST STATISTICS BY COUNTY BETWEEN 1993 AND 1994

<u>COUNTY</u>	<u>1994 PERMITS</u>	<u>1994 HARVEST</u>	<u>1994 PERMIT SUCCESS</u>	<u>1993 PERMIT SUCCESS</u>	<u>CHANGE IN PERMIT SUCCESS BETWEEN 1993-1994</u>	<u>PERCENTAGE CHANGE IN PERMIT SUCCESS BETWEEN 1993-1994</u>
Adams	7314	2913	40%	43%	-3%	7
Alexander	1176	344	28%	28%	0%	-4
Bond	2413	824	34%	30%	4%	14
Boone	991	338	34%	37%	-3%	8
Brown	3736	1706	46%	48%	-2%	5
Bureau	2936	1050	36%	37%	-1%	3
Calhoun	2900	1031	36%	34%	2%	-5
Carroll	3043	1049	34%	36%	-2%	4
Cass	1836	642	35%	40%	-5%	13
Champaign	794	266	34%	31%	3%	-8
Christian	1564	516	33%	31%	2%	-6
Clark	2649	1016	38%	37%	1%	-4
Clay	2994	1079	39%	34%	5%	14
Clinton	1796	615	34%	24%	10%	-43
Coles	1743	638	37%	29%	8%	-26
Crawford	2749	1141	42%	44%	-2%	6
Cumberland	1887	680	36%	33%	3%	-9
DeKalb	1077	372	35%	37%	-2%	7
DeWitt	1093	408	37%	39%	-2%	4
Douglas	605	227	38%	31%	7%	-21
Edgar	1574	615	39%	37%	2%	-6
Edwards	1130	478	42%	49%	-7%	14
Effingham	2338	772	33%	29%	4%	-14
Fayette	4828	1749	36%	35%	1%	-4
Ford	331	97	29%	40%	-11%	27
Franklin	2658	888	33%	34%	-1%	2
Fulton	5737	1887	33%	34%	-1%	3
Gallatin	1586	602	38%	38%	-0%	0
Greene	3021	1261	42%	43%	-1%	3
Grundy	1800	590	33%	31%	2%	-6
Hamilton	2306	931	40%	38%	2%	-6
Hancock	4001	1674	42%	43%	-1%	3
Hardin	2470	946	38%	36%	2%	-6
Henderson	1813	697	38%	38%	0%	-1
Henry	1845	639	35%	40%	-5%	13

Appendix A. Continued.

<u>COUNTY</u>	<u>1994 PERMITS</u>	<u>1994 HARVEST</u>	<u>1994 PERMIT SUCCESS</u>	<u>1993 PERMIT SUCCESS</u>	<u>CHANGE IN PERMIT SUCCESS BETWEEN 1993-1994</u>	<u>PERMIT CHANGE IN PERMIT SUCCESS BETWEEN 1993-1994</u>
Iroquois	2283	860	38%	34%	4%	-11
Jackson	7807	2826	36%	36%	0%	-1
Jasper	2931	1183	40%	39%	1%	-3
Jefferson	4234	1740	41%	38%	3%	-8
Jersey	2204	705	32%	27%	5%	-18
JoDavieess	6871	2342	34%	38%	-4%	10
Johnson	6244	2304	37%	38%	-1%	3
Kankakee	979	216	22%	23%	-1%	4
Kendall	495	129	26%	23%	3%	-13
Knox	3103	1155	37%	39%	-2%	5
LaSalle	3508	1167	33%	36%	-3%	8
Lawrence	1569	725	46%	46%	0%	0
Lee	2055	778	38%	36%	2%	-5
Livingston	1352	440	33%	38%	-5%	14
Logan	1101	440	40%	37%	3%	-8
Macon	778	264	34%	31%	3%	-9
Macoupin	5421	1938	36%	30%	6%	-19
Madison	3295	906	27%	25%	2%	-10
Marion	3254	1257	39%	35%	4%	-10
Marshall	1626	595	37%	39%	-2%	6
Mason	1565	530	34%	36%	2%	6
Massac	1189	452	38%	35%	3%	-9
McDonough	2080	804	39%	43%	-4%	10
McHenry	2907	817	28%	29%	-1%	3
McLean	2304	853	37%	39%	-2%	5
Menard	1162	444	38%	39%	-1%	2
Mercer	2118	740	35%	33%	2%	-6
Monroe	2464	751	30%	32%	-2%	5
Montgomery	3342	1292	39%	37%	2%	-4
Morgan	2567	1154	45%	47%	-2%	-4
Moultrie	663	208	31%	34%	3%	8
Ogle	4035	1490	37%	39%	-2%	5
Peoria	3574	1115	31%	30%	1%	-4
Perry	4124	1692	41%	41%	0%	0
Piatt	446	173	39%	34%	5%	-14
Pike	8197	4026	49%	51%	-2%	4
Pope	6691	2557	38%	35%	3%	-9

Appendix A. Continued

<u>COUNTY</u>	<u>1994 PERMITS</u>	<u>1994 HARVEST</u>	<u>1994 PERMIT SUCCESS</u>	<u>1993 PERMIT SUCCESS</u>	<u>CHANGE IN PERMIT SUCCESS BETWEEN 1993-1994</u>	<u>PERMIT CHANGE IN PERMIT SUCCESS BETWEEN 1993-1994</u>
Pulaski	1806	809	45%	46%	-1%	3
Putnam	950	378	40%	41%	-1%	3
Randolph	5630	2303	41%	39%	2%	-5
Richland	1818	812	45%	42%	3%	-6
Rock Island	2187	703	32%	32%	0%	0
Saline	2020	800	40%	34%	6%	-16
Sangamon	2351	774	33%	32%	1%	-3
Schuyler	3892	1670	43%	43%	-0%	0
Scott	1359	655	48%	52%	-4%	7
Shelby	3433	1088	32%	34%	-2%	7
Stark	503	198	39%	40%	-1%	2
St. Clair	3201	990	31%	32%	-1%	3
Stephenson	2916	1135	39%	44%	-5%	12
Tazewell	2206	741	34%	32%	2%	-5
Union	6068	2081	34%	36%	-2%	5
Vermilion	2903	982	34%	33%	1%	-3
Wabash	744	318	43%	42%	1%	-2
Warren	1372	537	39%	40%	-1%	2
Washington	3112	1171	38%	35%	3%	-8
Wayne	2959	1293	44%	43%	1%	-2
White	2021	851	42%	45%	-3%	6
Whiteside	2140	797	37%	42%	-5%	11
Will	1638	328	20%	21%	-1%	5
Williamson	5165	1624	31%	34%	-3%	8
Winnebago	2525	839	33%	35%	-2%	5
Woodford	2311	915	40%	41%	-1%	3
Cty. Totals	260,302	96,541	37%	37%	0%	0%

* Harvest figures do not include 1,182 deer harvested on special hunt areas.

APPENDIX B

1994 ILLINOIS MUZZLELOADING DEER HARVEST

<u>COUNTY</u>	<u>Quota*</u>	<u>PERMITS ISSUED</u>			<u>HARVEST</u>			
		<u>E-S</u>	<u>A-O</u>	<u>TOTAL</u>	<u>MALE</u>	<u>FEMALE</u>	<u>UNK.</u>	<u>TOTAL</u>
Adams	(113)	78	12	90	3	3	1	7
Alexander	(24)	17	0	17	1	1	0	2
Bond	(36)	31	2	33	0	3	0	3
Boone	(20)	20	3	23	3	0	0	3
Brown	(63)	52	9	61	4	10	0	14
Bureau	(47)	47	10	57	3	4	0	7
Calhoun	(44)	34	1	35	3	5	1	9
Carroll	(50)	50	4	54	4	4	0	8
Cass	(27)	30	3	33	3	1	0	4
Champaign	(20)	20	3	23	2	3	0	5
Christian	(26)	26	4	30	2	2	0	4
Clark	(39)	33	4	37	2	2	0	4
Clay	(35)	35	3	38	2	2	0	4
Clinton	(26)	20	0	20	0	0	0	0
Coles	(26)	26	2	28	0	2	0	2
Crawford	(39)	39	5	44	5	1	0	6
Cumberland	(29)	29	0	29	1	1	0	2
DeKalb	(20)	22	7	29	0	2	0	2
DeWitt	(20)	20	1	21	0	2	0	2
Douglas	(20)	20	0	20	1	0	0	1
Edgar	(26)	26	5	31	2	2	0	4
Edwards	(21)	14	0	14	0	2	0	2
Effingham	(30)	30	2	32	2	3	0	5
Fayette	(60)	60	5	65	4	4	0	8
Ford	(20)	20	0	20	0	0	0	0
Franklin	(38)	38	3	41	3	1	0	4
Fulton	(81)	81	4	85	5	5	0	10
Gallatin	(27)	25	4	29	4	2	0	6
Greene	(39)	39	2	41	3	1	1	5
Grundy	(28)	24	7	31	1	0	0	1
Hamilton	(36)	28	0	28	4	1	0	5
Hancock	(60)	49	3	52	1	1	0	2
Hardin	(53)	29	0	29	0	7	0	7
Henderson	(42)	17	0	17	2	0	0	2
Henry	(26)	27	3	30	1	0	0	1
Iroquois	(35)	35	5	40	1	2	0	3

Appendix B. Continued.

<u>COUNTY</u>	<u>Quota*</u>	<u>PERMITS ISSUED</u>			<u>HARVEST</u>			
		<u>E-S</u>	<u>A-O</u>	<u>TOTAL</u>	<u>MALE</u>	<u>FEMALE</u>	<u>UNK.</u>	<u>TOTAL</u>
Jackson	(117)	117	15	132	5	6	0	11
Jasper	(36)	36	2	38	1	1	0	2
Jefferson	(60)	39	3	42	3	6	0	9
Jersey	(31)	31	2	33	0	0	0	0
JoDaviess	(111)	111	19	130	7	6	1	14
Johnson	(93)	93	11	104	9	7	0	16
Kankakee	(20)	20	0	20	1	1	0	2
Kendall	(20)	18	0	18	0	0	0	0
Knox	(49)	49	7	56	1	3	0	4
LaSalle	(59)	59	9	68	0	3	0	3
Lawrence	(26)	26	5	31	4	3	0	7
Lee	(35)	35	4	39	1	1	0	2
Livingston	(20)	20	1	21	0	1	0	1
Logan	(20)	20	3	23	1	1	0	2
Macon	(20)	20	0	20	3	2	0	5
Macoupin	(68)	68	14	82	2	4	3	9
Madison	(54)	54	4	58	0	3	0	3
Marion	(45)	45	1	46	5	5	0	10
Marshall	(29)	29	4	33	2	1	0	3
Mason	(29)	29	1	30	0	2	0	2
Massac	(20)	19	2	21	1	1	0	2
McDonough	(30)	28	3	31	4	2	0	6
McHenry	(40)	40	14	54	2	2	0	4
McLean	(29)	29	6	35	1	1	0	2
Menard	(22)	22	1	23	1	2	0	3
Mercer	(39)	39	2	41	0	0	0	0
Monroe	(38)	37	0	37	0	2	0	2
Montgomery	(47)	47	2	49	2	2	0	4
Morgan	(36)	36	4	40	2	4	0	6
Moultrie	(20)	20	5	25	0	1	0	1
Ogle	(53)	54	8	62	2	4	0	6
Peoria	(60)	45	2	47	0	1	0	1
Perry	(56)	56	2	58	2	4	0	6
Piatt	(20)	19	1	20	0	0	0	0
Pike	(105)	105	14	119	12	9	1	22
Pope	(149)	100	0	100	6	4	0	10
Pulaski	(30)	12	2	14	0	1	0	1
Putnam	(20)	20	1	21	1	1	0	2
Randolph	(78)	78	8	86	10	4	0	14

Appendix B. Continued.

COUNTY	Quota*	PERMITS ISSUED			HARVEST			
		E-S	A-O	TOTAL	MALE	FEMALE	UNK.	TOTAL
Richland	(23)	22	1	21	1	0	0	1
Rock Island	(44)	44	2	46	3	2	0	5
Saline	(39)	39	0	39	4	2	0	6
Sangamon	(35)	35	3	38	1	0	0	1
Schuyler	(53)	52	4	56	0	3	0	3
Scott	(21)	18	0	18	0	0	0	0
Shelby	(42)	42	3	45	0	3	0	3
Stark	(20)	14	2	16	0	0	0	0
St. Clair	(45)	45	3	48	3	2	0	5
Stephenson	(41)	41	2	43	5	3	0	8
Tazewell	(35)	35	4	39	2	1	0	3
Union	(96)	97	16	113	12	13	2	27
Vermilion	(47)	47	7	54	0	1	0	1
Wabash	(20)	13	0	13	1	0	0	1
Warren	(23)	15	1	16	1	3	0	4
Washington	(41)	41	5	46	2	1	0	3
Wayne	(36)	32	2	34	1	2	0	3
White	(27)	17	1	18	0	2	0	2
Whiteside	(39)	39	5	44	1	2	0	3
Will	(29)	29	4	33	3	2	0	5
Williamson	(78)	77	7	84	3	5	0	8
Winnebago	(37)	37	6	43	1	3	0	4
Woodford	(36)	36	6	43	3	0	0	3
Cty. Total		3,783	382	4,165	210	230	10	450

* Quota figures (in parenthesis) are for either-sex permits only.

APPENDIX C

1994 ILLINOIS ARCHERY DEER HARVEST

<u>COUNTY</u>	<u>MALE</u>	<u>FEMALE</u>	<u>UNK.</u>	<u>TOTAL</u>
Adams	273	144	6	423
Alexander	52	29	0	81
Bond	109	88	1	198
Boone	102	61	0	163
Brown	176	96	0	272
Bureau	140	85	0	225
Calhoun	129	73	3	205
Carroll	134	56	0	190
Cass	117	69	1	187
Champaign	138	66	5	209
Christian	124	81	1	206
Clark	141	81	9	231
Clay	113	69	1	183
Clinton	97	62	5	164
Coles	107	63	1	171
Cook	71	20	0	91
Crawford	225	141	0	366
Cumberland	85	52	0	137
DeKalb	141	85	5	231
DeWitt	109	92	7	208
Douglas	44	33	1	78
DuPage	85	34	1	120
Edgar	102	69	0	171
Edwards	82	39	3	124
Effingham	111	54	0	165
Fayette	170	118	1	289
Ford	16	14	0	30
Franklin	182	114	4	300
Fulton	260	141	0	401
Gallatin	70	40	0	110
Greene	145	70	0	215
Grundy	154	82	0	236
Hamilton	72	41	2	115
Hancock	118	56	0	174
Hardin	114	58	2	174
Henderson	69	37	0	106
Henry	108	62	2	172

Appendix C - continued.

<u>COUNTY</u>	<u>MALE</u>	<u>FEMALE</u>	<u>UNK.</u>	<u>TOTAL</u>
Iroquois	164	137	3	304
Jackson	303	175	7	485
Jasper	159	98	1	258
Jefferson	274	218	3	495
Jersey	97	39	3	139
JoDaviess	271	100	0	371
Johnson	282	176	4	462
Kane	254	128	3	385
Kankakee	97	47	0	144
Kendall	54	27	1	82
Knox	192	96	0	288
Lake	332	157	1	490
LaSalle	312	209	1	522
Lawrence	141	94	1	236
Lee	156	98	0	254
Livingston	91	59	0	150
Logan	106	50	0	156
Macon	100	101	0	201
Macoupin	257	183	1	441
Madison	237	123	3	363
Marion	200	143	11	354
Marshall	71	35	0	106
Mason	147	85	1	233
Massac	116	55	0	171
McDonough	93	60	0	153
McHenry	405	204	3	612
McLean	215	151	2	368
Menard	91	45	0	136
Mercer	40	22	1	63
Monroe	78	34	3	115
Montgomery	133	127	8	268
Morgan	161	85	1	247
Moultrie	70	36	0	106
Ogle	303	129	0	432
Peoria	252	148	1	401
Perry	214	126	3	343
Piatt	63	47	1	111
Pike	511	287	0	798

Appendix C - continued.

<u>COUNTY</u>	<u>MALE</u>	<u>FEMALE</u>	<u>UNK.</u>	<u>TOTAL</u>
Pope	268	172	1	441
Pulaski	101	70	1	172
Putnam	56	29	0	85
Randolph	248	146	3	397
Richland	117	81	0	198
Rock Island	134	69	1	204
Saline	105	70	0	180
Sangamon	182	110	1	293
Schuyler	103	75	0	178
Scott	48	33	3	84
Shelby	173	118	0	291
Stark	41	24	1	66
St. Clair	177	106	18	301
Stephenson	162	81	2	43
Tazewell	215	122	0	337
Union	251	197	8	456
Vermilion	262	157	1	420
Wabash	71	45	4	120
Warren	71	27	0	98
Washington	139	74	1	214
Wayne	190	99	5	294
White	143	71	10	224
Whiteside	105	62	0	167
Will	394	214	0	608
Williamson	273	194	7	474
Winnebago	255	136	0	391
<u>Woodford</u>	<u>163</u>	<u>108</u>	<u>0</u>	<u>271</u>
Cty. Totals	15,974	9,404	193	25,571

Special Hunt Areas

<u>COUNTY</u>	<u>MALE</u>	<u>FEMALE</u>	<u>UNK.</u>	<u>TOTAL</u>
CILCO1	3	9	0	1
Michigan *	1	0	1	1
Missouri *	1	0	0	1
<u>Wisconsin *</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>2</u>
Grand Total	15,980 (62%)	9,414 (37%)	193 (1%)	25,586

* Harvest figures listed for Michigan, Missouri and Wisconsin are apparent key punch errors.

Final Report

SURVEYS AND INVESTIGATIONS PROJECTS

As Required By

FEDERAL AID IN WILDLIFE RESTORATION ACT

ILLINOIS

Federal Aid Project W-105 - R(6)

STUDY 1: POPULATION STUDIES OF WHITE-TAILED DEER

Job 1C Analysis of Highway Kill

By
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ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Mike Sweet
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Forest Wildlife Program Manager

August 31, 1995

Objective: To monitor deer-vehicle accidents on Illinois highways for the purpose of maintaining a county-by-county and statewide index of frequency, time of day and time of year that accidents occur. Results are used to assist in estimating deer population densities which in turn are used in formulating harvest quotas. Future use of deer-vehicle accident statistics include their inclusion as an additional population parameter into a statewide simulated deer population model. An additional use of these data is to alert the public of peak time periods of deer-vehicle accidents, with the anticipated results of reduced vehicular accidents and human injuries.

DISCUSSION:

The Illinois Department of Natural Resources (IDNR) receives an annual computer printout summary of deer-vehicle accidents (DVA's) from the Department of Transportation (IDOT). While there is a delay of ≤ 9 months between the end of the calendar year and receipt of the DVA summaries from IDOT, the summaries still provide valuable information for analyzing long-term trends (of course, realizing the inherent biases and confounding variables associated with these databases), for evaluating, in part, the extent of negative human-deer interactions and for public education purposes. IDOT has maintained records of DVA's on State-owned or -maintained roadways for several years and has also prepared summaries for all roadways since 1989. Due to the longer term database, IDNR mostly utilizes the accident information for State-owned and -maintained roads (State routes).

Appendix A summarizes the number of reported DVA's and associated injuries and fatalities by county for 1994. The statewide DVA for State routes during 1994 represents an increase of only 2.6 percent from 1993. The number of human fatalities associated with DVA's on State routes increased by 2 to a total of 4; the number of accidents involving human fatalities increased by 1 to a total of 3. The number of motorists and/or passengers injured in a DVA on State routes during 1994 increased by 35 from 1993; the total number of DVA's involving injuries only increased by 10 to a total of 426 during 1994. The 1994 DVA total for all routes increased 3.7 percent from 1993; the number of humans injured decreased by 18, but the number of fatalities increased by 2 in 1994.

Appendix B lists the total reported DVA's on State routes for 1984 through 1994. It is interesting to note that the rate of increase in total statewide DVA's has slowed during recent years. Since 1991, the year the Illinois deer harvest was considerably liberalized, the annual rate of increase in DVA's on State routes has been ≤ 5 percent (range = 0.1% to 5.0%). From 1984 to 1991, the rate of increase was .6% (range = 6.5% to 30.9%). The question of "why?" becomes important. Does the slower rate of increase in DVA's indicate that current harvest strategies are attaining goals of stopping/slowing herd growth, that the public has been made more aware of this "road hazard" and is driving more alertly, or does it indicate some sort of saturation point? Or do these changes over time indicate changes in the DVA reporting procedures, transfer of road segments from State to local jurisdiction or changes in vehicular traffic patterns, volume and speed. It is most likely a combination of factors which will only be

isolated through continued analysis.

Other Job activities during this reporting period focused on more detailed analysis of parameters influencing DVA's and on public education. The Ruffed Grouse and Tree Squirrel Project Manager (Mr. Mike Gregonis) drafted a report (in preparation) which explored the daily and seasonal timing of DVA's in Illinois, identified DVA "hotspots" by county, and attempted to correlate traffic volume and patterns and adjacent land uses with road segments of historically high numbers of DVA's. To augment the other and on-going methods (e.g., press releases, articles in Outdoor Illinois, public presentations, etc.) of making the public aware of the threat of DVA's, the Forest Wildlife Program prepared an information/educational brochure (still in preparation) for distribution to the public. Means of distribution is still open to discussion, but it is hoped that continued public education through multiple media will minimize the threat to human safety.

Appendix A

1994 Illinois Deer Vehicle Accidents on State Owned or Maintained Highways

<u>County</u>	<u>Total Accidents</u>	<u>Number of Accidents W/Injuries</u>	<u>Number of Accidents</u>	<u>Deaths</u>
1 ADAMS	139	7	7	
2 ALEXANDER	29	0	0	
3 BOND	70	1	1	
4 BOONE	60	2	2	
5 BROWN	37	3	3	
6 BUREAU	75	4	7	
7 CALHOUN	33	0	0	
8 CARROLL	91	1	1	
9 CASS	39	1	1	
10 CHAMPAIGN	133	5	5	
11 CHRISTIAN	56	2	2	
12 CLARK	79	4	5	
13 CLAY	55	0	0	
14 CLINTON	40	3	3	
15 COLES	123	3	3	1
16 COOK	588	30	36	
17 CRAWFORD	129	3	4	
18 CUMBERLAND	74	3	3	
19 DEKALB	98	2	2	
20 DEWITT	75	3	3	
21 DOUGLAS	36	1	2	
22 DUPAGE	108	7	7	
23 EDGAR	61	3	3	
24 EDWARDS	48	1	2	
25 EFFINGHAM	137	7	7	
26 FAYETTE	84	6	9	
27 FORD	45	2	2	
28 FRANKLIN	186	5	5	
29 FULTON	104	3	3	
30 GALLATIN	18	1	1	
31 GREENE	71	3	3	
32 GRUNDY	56	0	0	
33 HAMILTON	16	2	6	
34 HANCOCK	96	3	3	
35 HARDIN	27	1	1	

Appendix A. Continued.

<u>County</u>	<u>Total Accidents</u>	<u>Number of Accidents W/Injuries</u>	<u>Number of Accidents</u>	<u>Deaths</u>
36 HENDERSON	50	3	5	
37 HENRY	124	7	8	
38 IROQUOIS	75	3	3	
39 JACKSON	221	8	10	
40 JASPER	52	0	0	
41 JEFFERSON	124	2	4	
42 JERSEY	95	5	5	
43 JODAVIESS	60	2	2	
44 JOHNSON	115	3	5	
45 KANE	286	9	11	
46 KANKAKEE	87	4	6	
47 KENDALL	52	1	1	
48 KNOX	70	6	6	
49 LAKE	350	14	15	
50 LASALLE	193	6	6	
51 LAWRENCE	69	3	3	
52 LEE	159	7	8	
53 LIVINGSTON	88	4	5	
54 LOGAN	70	2	2	
55 MCDONOUGH	47	4	4	
56 MCHENRY	318	9	10	
57 MCLEAN	123	11	11	
58 MACON	131	6	7	
59 MACOUPIN	132	7	12	
60 MADISON	241	12	12	
61 MARION	123	1	1	1
62 MARSHALL	69	2	2	
63 MASON	41	2	2	
64 MASSAC	81	1	1	
65 MENARD	12	2	2	
66 MERCER	46	6	11	
67 MONROE	47	1	1	
68 MONTGOMERY	85	3	5	
69 MORGAN	96	6	11	
70 MOULTRIE	31	2	2	
71 OGLE	173	1	0	2
72 PEORIA	187	8	9	

Appendix A. Continued.

<u>County</u>	<u>Total Accidents</u>	<u>Number of Accidents W/Injuries</u>	<u>Number of Accidents</u>	<u>Deaths</u>
73 PERRY	125	5	5	
74 PIATT	36	1	1	
75 PIKE	263	6	7	
76 POPE	57	0	0	
77 PULASKI	55	2	3	
78 PUTNAM	23	1	1	
79 RANDOLPH	137	4	4	
80 RICHLAND	73	2	2	
81 ROCK ISLAND	116	6	6	
82 ST. CLAIR	195	10	11	
83 SALINE	108	5	8	
84 SANGAMON	227	14	20	
85 SCHUYLER	65	2	3	
86 SCOTT	40	2	2	
87 SHELBY	63	1	1	
88 STARK	26	2	2	
89 STEPHENSON	106	3	4	
90 TAZEWELL	126	3	3	
91 UNION	121	2	2	
92 VERMILION	97	12	17	
93 WABASH	37	1	3	
94 WARREN	48	1	2	
95 WASHINGTON	69	3	4	
96 WAYNE	56	1	1	
97 WHITE	91	2	2	
98 WHITESIDE	99	9	13	
99 WILL	252	9	9	
100 WILLIAMSON	231	8	8	
101 WINNEBAGO	231	7	10	
102 WOODFORD	79	8	8	
TOTALS	10,691	426	512	4

APPENDIX B

Deer Vehicle Accidents Reported On State Owned Or Maintained Highway

<u>County</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
1 ADAMS	71	67	105	72	111	143	125	117	152	159	139
2 ALEXANDER	4	14	14	15	12	18	22	19	23	22	29
3 BOND	20	20	28	37	41	47	64	44	50	54	70
4 BOONE	43	26	39	46	45	53	59	56	67	55	60
5 BROWN	14	20	10	13	18	20	34	41	39	50	37
6 BUREAU	35	60	65	43	71	57	37	130	124	93	75
7 CALHOUN	17	13	27	32	20	24	8	26	29	18	33
8 CARROLL	32	29	51	46	61	87	76	85	77	81	91
9 CASS	16	12	19	16	26	23	36	37	36	43	39
10 CHAMPAIGN	46	39	67	65	82	100	124	111	148	124	133
11 CHRISTIAN	27	25	29	36	48	46	58	48	55	64	56
12 CLARK	41	40	54	61	57	63	30	75	87	79	79
13 CLAY	22	18	19	24	41	38	54	58	55	41	55
14 CLINTON	17	16	26	28	33	30	44	38	46	34	40
15 COLES	37	52	59	73	77	81	78	91	116	98	123
16 COOK	354	380	469	436	494	499	610	655	707	645	588
17 CRAWFORD	34	58	60	62	78	79	104	104	114	115	129
18 CUMBERLAND	20	21	24	28	47	52	48	76	49	56	74
19 DEKALB	17	20	38	45	56	49	58	74	58	66	98
20 DEWITT	22	24	27	64	59	51	49	65	93	67	75
21 DOUGLAS	7	12	16	22	17	22	24	22	21	39	36
22 DUPAGE	50	58	76	72	85	74	109	106	135	127	108
23 EDGAR	18	29	21	42	30	31	40	58	58	44	61
24 EDWARDS	9	21	21	21	24	26	36	42	43	36	48
25 EFFINGHAM	40	50	59	70	88	85	109	95	101	100	137
26 FAYETTE	37	32	56	53	47	83	77	78	74	93	84
27 FORD	12	9	14	16	27	19	25	28	31	34	45
28 FRANKLIN	53	57	93	86	108	105	122	135	150	149	186
29 FULTON	61	60	64	76	94	85	98	125	120	156	104
30 GALLATIN	4	7	4	9	6	12	15	10	16	10	18
31 GREENE	30	34	40	36	49	44	54	70	67	62	71
32 GRUNDY	16	29	41	41	43	61	64	64	83	69	56
33 HAMILTON	12	8	20	13	11	17	5	15	28	8	16
34 HANCOCK	35	27	37	45	64	72	69	101	77	70	96
35 HARDIN	6	20	13	14	12	16	28	27	11	35	27
36 HENDERSON	19	16	27	28	38	24	21	55	34	63	50
37 HENRY	41	53	73	94	99	96	119	139	142	146	124
38 IROQUOIS	29	49	59	51	57	90	93	96	104	121	75
39 JACKSON	90	85	111	127	155	207	223	242	213	203	221
40 JASPER	16	18	22	27	25	31	21	43	40	39	52
41 JEFFERSON	65	82	100	90	119	126	159	130	142	110	124
42 JERSEY	33	34	50	55	54	56	59	80	74	65	95
43 JODAVIESS	44	47	63	60	65	76	94	100	76	77	60
44 JOHNSON	42	49	36	48	73	87	85	112	116	112	115
45 KANE	80	81	124	125	150	190	216	212	242	236	286

Appendix B. Continued.

<u>County</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
46 KANKAKEE	40	30	35	46	53	59	60	83	75	86	87
47 KENDALL	25	27	26	43	51	45	46	69	70	54	52
48 KNOX	30	31	40	57	64	70	89	70	105	85	70
49 LAKE	157	200	250	274	298	359	346	404	458	426	350
50 LASALLE	71	78	99	102	124	152	172	182	186	183	193
51 LAWRENCE	21	27	43	45	48	61	81	73	84	101	69
52 LEE	52	33	88	84	85	111	132	110	151	145	159
53 LIVINGSTON	19	25	37	46	44	47	72	84	82	73	88
54 LOGAN	19	15	27	32	44	41	28	55	58	76	70
55 MCDONOUGH	16	18	17	26	31	31	36	41	55	55	47
56 MCHENRY	117	129	165	193	237	250	269	322	315	293	318
57 MCLEAN	41	46	78	77	89	72	100	104	127	111	123
58 MACON	43	38	49	61	62	67	95	99	107	87	131
59 MACOUPIN	38	58	58	70	80	102	95	123	113	136	132
60 MADISON	84	88	148	131	180	207	193	232	242	228	241
61 MARION	43	42	63	78	85	90	120	107	121	105	123
62 MARSHALL	16	21	30	30	29	51	46	55	56	65	69
63 MASON	9	7	19	15	9	18	22	33	31	48	41
64 MASSAC	15	10	23	29	35	49	53	52	53	74	81
65 MENARD	16	14	9	14	21	21	6	35	29	19	12
66 MERCER	18	15	18	6	24	23	28	26	38	33	46
67 MONROE	27	22	36	31	36	33	55	46	35	49	47
68 MONTGOMERY	44	38	33	48	67	81	84	92	82	89	85
69 MORGAN	39	41	56	74	75	71	88	95	109	102	96
70 MOULTRIE	26	18	20	37	35	36	21	20	21	16	31
71 OGLE	83	86	100	108	125	113	147	135	177	173	173
72 PEORIA	92	73	128	131	141	149	178	146	182	225	187
73 PERRY	59	76	76	83	86	103	109	139	99	124	125
74 PIATT	20	13	22	11	25	27	33	23	47	28	36
75 PIKE	90	66	112	111	129	153	216	241	253	287	263
76 POPE	6	11	17	14	19	23	22	14	29	44	57
77 PULASKI	11	13	22	12	14	31	37	53	47	53	55
78 PUTNAM	24	14	20	20	24	17	26	33	31	35	23
79 RANDOLPH	45	58	76	74	77	85	117	122	89	99	137
80 RICHLAND	31	34	38	43	49	49	54	53	55	73	73
81 ROCK ISLAND	69	57	78	89	88	87	114	120	119	118	116
82 ST. CLAIR	58	82	95	102	109	107	162	161	177	167	195
83 SALINE	21	27	39	46	47	66	79	83	83	99	108
84 SANGAMON	68	56	113	112	155	182	192	185	167	215	227
85 SCHUYLER	23	32	32	33	34	57	57	44	54	79	65
86 SCOTT	15	13	18	31	29	34	28	48	48	34	40
87 SHELBY	26	32	44	38	34	49	46	61	39	60	63
88 STARK	5	7	7	5	13	19	17	18	15	19	26
89 STEPHENSON	50	46	50	70	85	113	88	121	95	117	106
90 TAZEWELL	51	49	70	64	85	98	121	103	128	146	126
91 UNION	51	45	45	66	61	73	90	105	91	100	121
92 VERMILION	65	69	75	108	116	107	122	104	103	105	97

Appendix B. Continued.

<u>County</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
93 WABASH	8	14	20	9	14	24	34	33	28	25	37
94 WARREN	16	18	19	28	35	33	37	44	52	46	48
95 WASHINGTON	26	37	47	39	44	48	71	81	64	76	69
96 WAYNE	19	26	32	33	41	39	41	52	76	73	56
97 WHITE	23	41	27	41	65	59	72	80	83	83	91
98 WHITESIDE	37	38	47	48	56	57	50	63	95	83	99
99 WILL	92	123	158	156	180	217	280	263	276	261	252
100 WILLIAMSON	81	96	123	125	147	166	179	188	196	208	231
101 WINNEBAGO	130	143	198	214	208	220	197	201	228	223	231
102 WOODFORD	<u>16</u>	<u>33</u>	<u>34</u>	<u>30</u>	<u>42</u>	<u>41</u>	<u>45</u>	<u>61</u>	<u>62</u>	<u>52</u>	<u>79</u>
TOTALS	4179	4517	5915	6301	7294	8088	9076	9926	10412	10419	10691

Final Report

SURVEYS AND INVESTIGATIONS PROJECTS

As Required By

FEDERAL AID IN WILDLIFE RESTORATION ACT

ILLINOIS

Federal Aid Project W-105 - R(6)

STUDY 1: POPULATION STUDIES OF WHITE-TAILED DEER

Job 1D: Crop and Orchard Depredation Investigations and Recommendations

By

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August 31, 1995

INTRODUCTION

When deer densities increase, whether on a local or regional scale, landowners may experience more crop, orchard, nursery and ornamental plant depredation. Additionally, an increase in deer densities can cause higher rates of deer-vehicle accidents. There is no biological standard that clearly defines "high" density. Instead, high deer density is a relative term that will vary based on individual perceptions. The Department recognizes the need to balance the positive values associated with large numbers of deer with the willingness of publics and landowners to tolerate and accept varying levels of deer-human conflicts.

The Department's current management philosophy is to use public hunting as the primary means to regulate deer densities locally and statewide. The major factors that determine whether hunting is possible on areas include:

1. human safety (e.g., small nature preserves next to a public school);
2. property security (e.g., zones within a nuclear facility);
3. seasonal use by deer outside of hunting seasons (e.g., deer are absent from a site during hunting season);
4. major conflicts with primary site function (e.g., airports); and
5. a combination of 1 thru 4.

When reduction or control of deer density is desired, the Department will enact more liberal regulations such as, but not limited to, adding more days to the regular firearm season, providing more seasons (e.g., muzzleloading and handgun) and/or increasing female harvest by issuing "bonus" antlerless-only and/or second-season permits.

Deer densities and frequency of depredation do not occur uniformly statewide. Therefore, the Department's deer management program must identify and address both local and regional concerns. Isolated local depredation typically occur within all Department administrative regions.

Deer removal permits are in no way intended to serve as long term management recommendations to alleviate excessive deer densities or to provide individuals with a recreational hunting opportunity. However, when deemed necessary, the Department may issue deer removal permits (in addition to public hunting) to reduce deer densities. These permits are issued either as Deer Removal Permits (DRP's) or as Deer Population Control Permits (DPCP's) and are valid for lands where:

1. Public hunting is a viable deer number reduction technique
 - a. public hunting is possible and allowed;
 - b. public hunting is possible but not allowed to the fullest extent possible due to landowner, homeowner or public sentiment or mission statement governing the property in question; or

2. Public hunting is not a viable deer management technique
 - a. public hunting is not possible due to concerns for human safety and/or precluded by federal, state, county or municipal statutes or ordinances.

Prior to 1991, deer depredation complaints had been handled by the Forest Wildlife Program with assistance from the Division's Management Section. Beginning in 1991 District Wildlife Managers became responsible for responding to deer related damage complaints in their districts. Interest from landowners in obtaining assistance continued to increase due in part to increased media coverage. As the number of complaints increased and intervention from special interest groups increased, the Forest Wildlife Program developed, and the Division adopted, an internal procedure protocol (Deer Depredation Procedural Manual written and accepted in 1992 and revised in 1995 (Appendix A) to address these concerns.

AUTHORITY

520 ILCS 5/2.37, Paragraph 3,4 and 5 of the Wildlife Code provide guidelines to be followed in granting authority to kill wild game responsible for property damage:

3. " If after investigating, the Department finds such damage to exist and can be abated only by removing or destroying such wildlife, a permit shall be issued by the Department to remove or destroy the species responsible causing such damage.
4. A permit to control such damage shall be for a period of up to 90 days, shall specify the means and methods by which the person or persons by whom the wildlife may be removed or destroyed and shall set forth the disposition procedure to be made of all wildlife taken, and such other restrictions as the Director deems necessary and appropriate in the circumstances of the particular case. Whenever possible, the specimens destroyed shall be given to a bona-fide public or state scientific, educational or zoological institution.
5. The permittee shall advise the Department in writing, within ten days after the expiration date of the permit, of the number of individual species of wildlife taken, disposition made of same, and any other information which the Department may consider necessary."

PROCEDURAL MANUAL UPDATE

Deer Project Managers solicited (via memo dated 18 March 1994) comments/ suggestions for the revision of the Special Deer Removal Permit Procedural Manual adopted in 1992. Only a limited number of comments were received indicating the current procedural manual is adequate and/or field personnel do not have complete copies of the manual.

Comments and questions included:

1) Deer Removal Permits:

- a) A means of determining (unacceptable) losses of soybeans is lacking; this procedure needs to be developed and incorporated into the manual.
- b) Permittees that fail to return the DRP, carcass summary, or unused carcass tags within 10 days should be precluded from receiving another permit for one year.
- c) DRP's should not be issued during the archery season on areas readily huntable in counties closed to firearm deer hunting.
- d) There ought to be a cut-off date (for DRP issuance) for standing crops left out late. Even under low deer densities, unharvested crops will reach the threshold level for issuance of a permit especially if all nearby fields have already been harvested. In the absence of a cut-off date, use of DRP's is subject to abuse as small crop fields are left unharvested in order to extend the "deer season".

2) Deer Population Control Permits:

- a) The timing and necessity of aerial counts needs to be spelled out relative to permit issuance.
- b) The procedural manual also needs to discuss the issuance of DPCP's during the firearm deer season on areas closed to firearm hunting but located in counties open to firearm deer hunting.

The "Procedural Manual on the Issuance of Special Deer Permits" was revised in 1995 by the Deer Project Managers, Forest Wildlife Program. Revisions were based on comments/concerns solicited from Division of Wildlife field personnel (i.e., DWM's and PLB's) in 1993 and comments received since. The revised manual is found in Appendix A of this annual report, but has been prepared to be used independently of this report as a field operational manual.

Due to an external audit of the DRP's and DPCP's during July 1994, issuers of DRP's will be requested to complete a Deer Damage Complaint (DDC) form/log for each complaint received. The DDC form in the procedural manual, or a relatively similar version, can be used for this purpose and to track course of action (e.g., sent damage abatement information, conducted site-evaluation, issued 30-day DRP for 10 antlered deer, etc.). Issuers of DRP's should submit summaries of the number of deer damage complaints received, site-evaluations performed, and DRP's issued during the calendar year by county to the Forest Wildlife Program during January.

Compilation of this information thwarts the unwarranted criticism that IDNR field personnel issue permits to anyone requesting one.

Negotiations with representatives of the Department of Agriculture and Public Health on the development of guidelines for the handling of deer carcasses from population control programs continued during 1994. With the Department of Corrections becoming involved (as a processor) in the Safari Club's Sportsmen Against Hunger program, negotiations between all four state departments were initiated; this elevated IDNR involvement to executive staff level. A Memorandum of Understanding (MOU) was drafted but not collectively approved; action on the MOU stalled due to withdrawal of Department of Agriculture and similar apprehension by Department of Corrections. Ultimately three departments signed the MOU which became effective 1 January 1995. **IDOA did not sign but provided the criteria for assessing suitability of carcasses for donation. Therefore, the criteria in the MOU need to be followed as outlined.**

DISCUSSION

Discussions with field biologists responsible for responding to depredation complaints identify general acceptance and satisfaction with the Deer Removal Procedural Manual. Previously, a major concern associated with issuing deer removal permits has been the need for guidelines to support their decision when a landowner is refused a permit. The consensus of field biologists indicates that the current procedure provides a standard which allows them to refuse a landowner a permit when there is insufficient deer depredation. Field personnel appear to appreciate standardization of the criteria used for not authorizing the issuance of a deer removal permit. In addition, guidelines outlining the type and extent of damage required before a permit is issued is appreciated.

DEER REMOVAL PERMITS

Table 1 illustrates the number of DRP's issued, permits returned, number of deer allowed and the actual number of deer taken by county.

Table 1.

Deer Removal Permits Issued and Kill Report 1 January through 31 December 1994				
<u>County</u>	<u>Deer Allowed</u>	<u>Deer Taken</u>	<u>Permits Issued</u>	<u>Permits Returned</u>
Adams	15	4	4	2
Boone	20	18	2	2
Calhoun	9	4	4	3
Carroll	40	7	4	4
Cass	1	1	1	1
Champaign	48	26	10	10
Christian	4	0	2	2
Clinton	3	1	1	1
Cook/DuPage	6	4	1	1
Crawford	2	0	1	1
DeKalb	19	0	3	3
DeWitt	4	2	1	1
DuPage	10	2	1	1
Fayette	5	0	2	2
Franklin	12	7	3	3
Fulton	3	2	1	1
Grundy	82	37	11	10
Hancock	1	1	1	1
Henderson	3	0	2	2
Henry	5	0	1	1
Jackson	79	61	10	8
Jasper	4	0	1	1
Jefferson	10	3	7	7
Jersey	6	0	2	2
Johnson	52	32	10	9
Kane	55	17	10	10
Kendall	2	0	1	1
Lake	12	3	2	2
LaSalle	27	8	4	4
Lee	7	2	1	1

Table 1. Continued.

<u>County</u>	<u>Deer Allowed</u>	<u>Deer Taken</u>	<u>Permits Issued</u>	<u>Permits Returned</u>
Macon	2	0	1	1
Macoupin	10	6	5	5
Madison	5	0	1	1
Massac	16	10	3	2
Massac/Pope	10	10	1	1
McHenry	91	9	10	9
McLean	16	10	4	4
Menard	2	0	1	1
Montgomery	10	6	3	3
Ogle	31	15	4	4
Perry	11	8	3	3
Pike	77	45	22	20
Pope	11	10	3	3
Pulaski/Massac	5	0	1	0
Randolph	2	2	1	1
Saline	8	8	3	3
Sangamon	4	0	2	2
Schuyler	31	24	7	7
St. Clair	3	3	1	1
Stephenson	10	4	2	2
Union	55	19	9	8
Union/Jackson	5	5	1	1
Union/Johnson	5	5	1	1
Vermilion	32	17	5	5
Warren	5	0	1	1
White	2	2	1	1
Will	16	12	3	3
Williamson	5	5	1	1
<u>Winnebago</u>	<u>8</u>	<u>3</u>	<u>1</u>	<u>1</u>
Totals	1,034	480	205	194

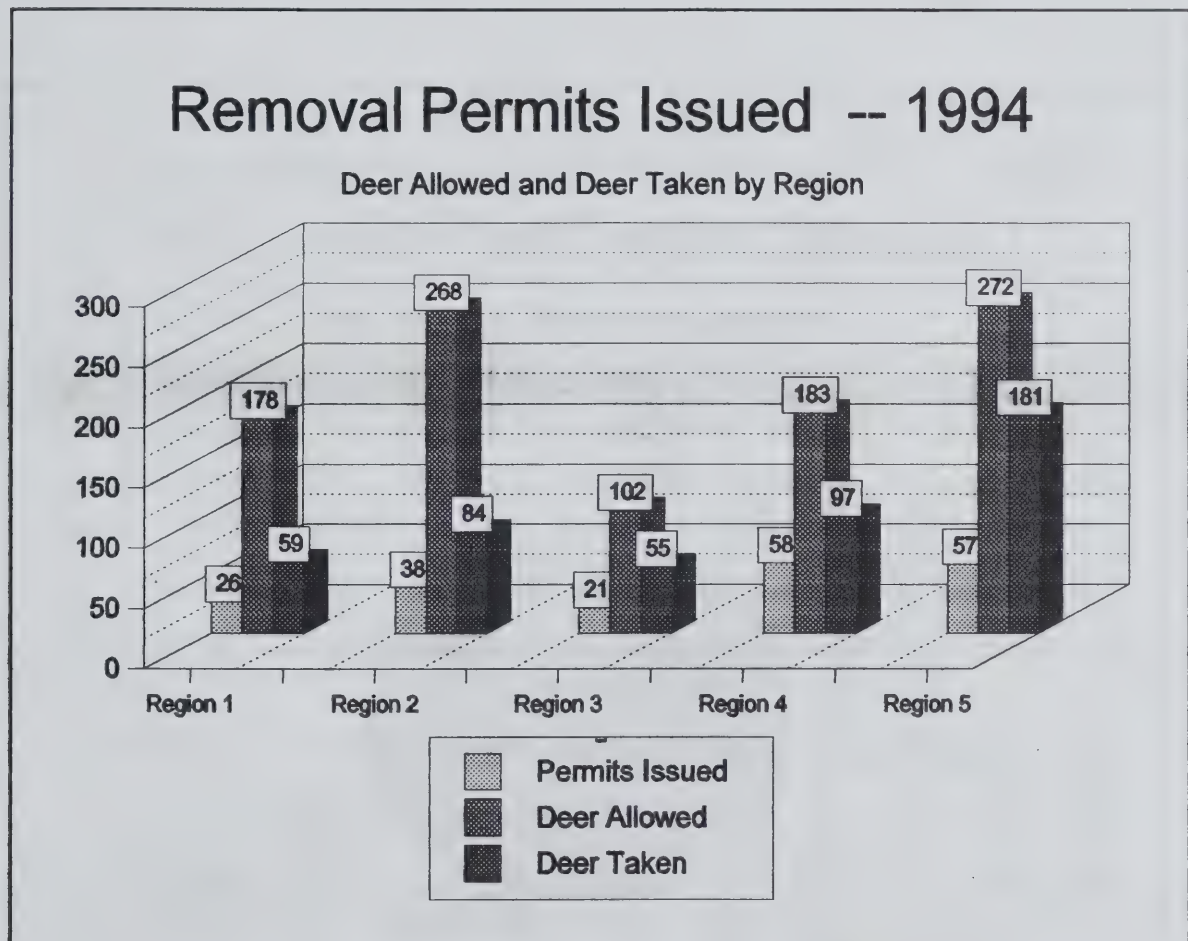
Table 2 illustrates the statewide average number of deer taken with 205 DRP's was 2.3. Therefore, it is recommended that the following regional averages be followed when issuing the initial permit.

Table 2

<u>Region</u>	<u>Average Number of Deer Taken Per DRP Issued</u>
1	2
2	2
3	2
4	1
<u>5</u>	<u>3</u>
Statewide	2

Graph 1 identifies that between 1 January and December 31, 1994 there were 205 deer removal permits issued (by Region), allowing for the removal of 1,034 deer with the actual removal of 394 statewide.

Graph 1

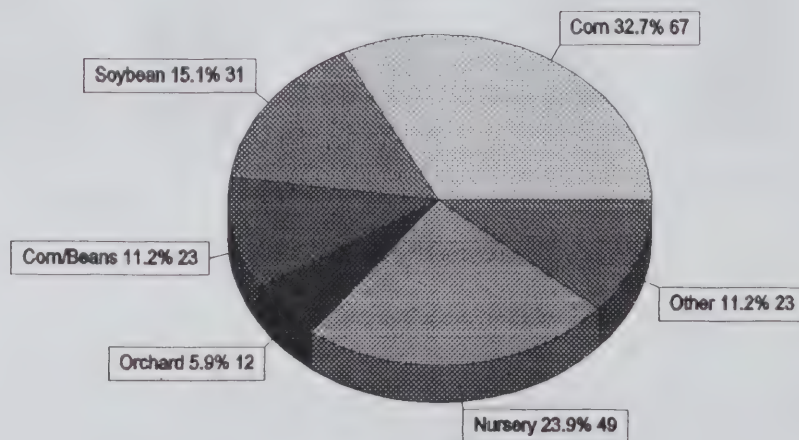


Grazing of agricultural crops (i.e., corn and soybeans) by deer occurred primarily during the spring shortly after the crops emerged. Additional damage occurred to corn during the milk and silk stage of development. Antler rub damage occurred to nursery and orchard stock primarily during October and November, with additional damage taking place during the winter in the form of browsing. Of 205 DRP's issued during 1994, the six leading causes of damage attributed to deer were as illustrated in Chart 1 below.

Chart 1

Depredation by Crop Type -- 1994

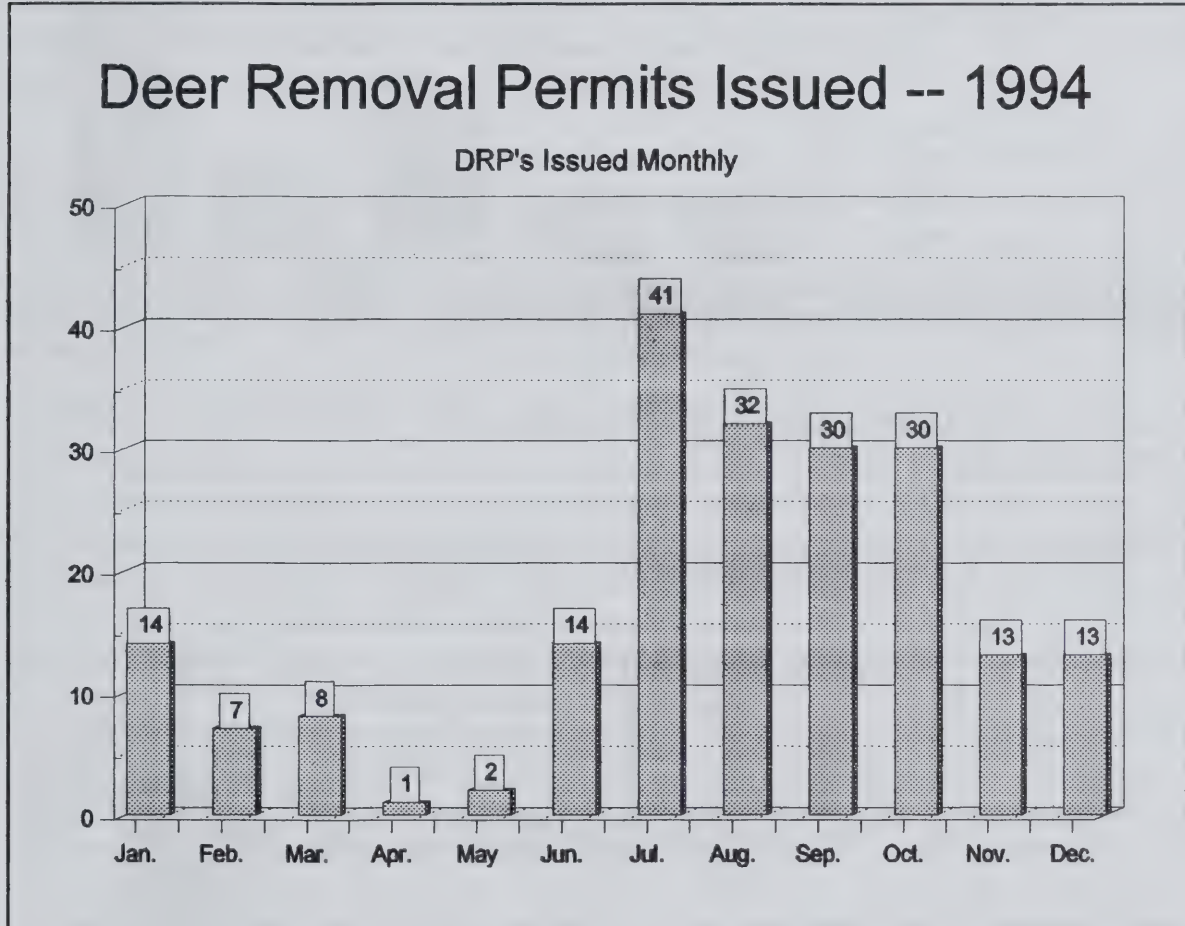
Percentage and Numeric Values by Crop



Other = Public Safety (7), Christmas Trees (5), Alfalfa (3), Ornamental/Garden (3), Straw berries (2), Browse (1) and Wheat (1).

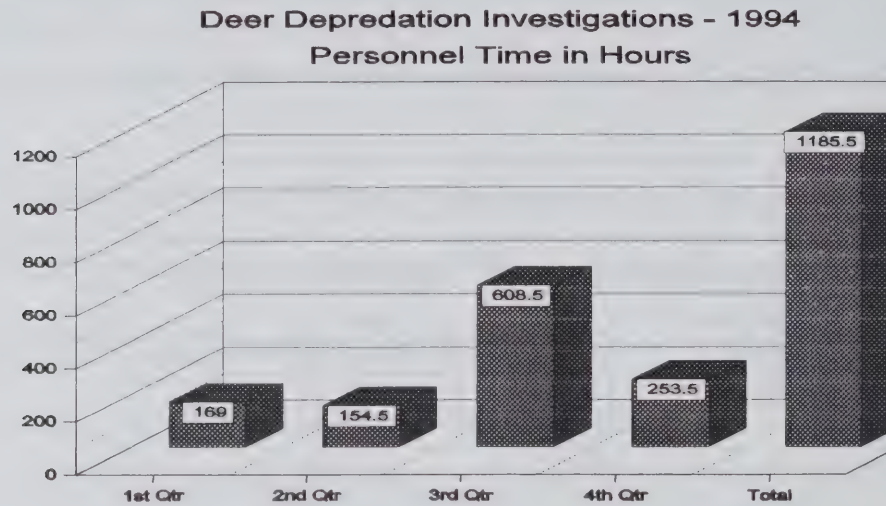
Graph 2 illustrates the temporal issuance of removal permits statewide during 1994. Reported depredation varied by location within the state and time of year.

Chart 2



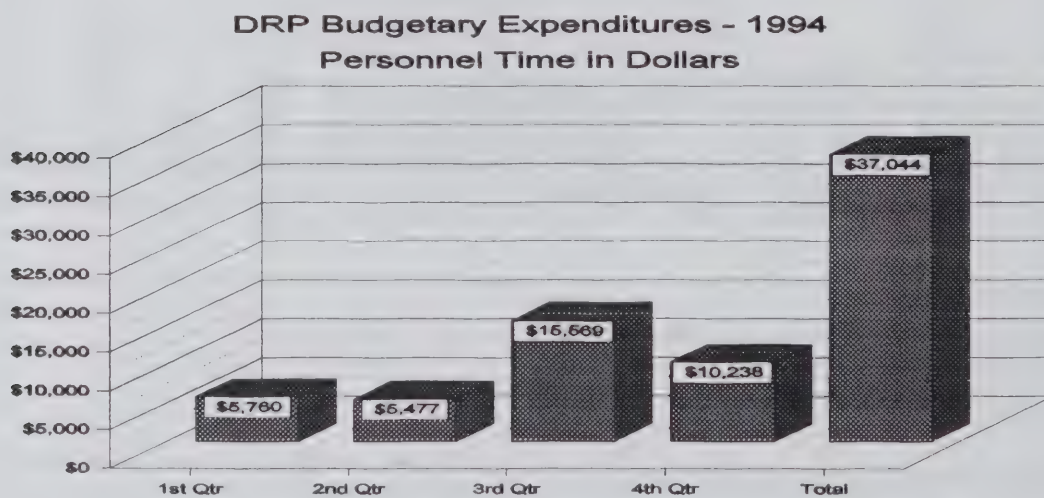
Graph 3 illustrates the personnel time expended during 1994 for the investigation of deer depredation complaints and the issuance of DRP's.

Graph 3



Graph 4 depicts the personnel time (in dollars) expended investigating deer depredation complaints and the issuance of DRP's.

Graph 4



DEER POPULATION CONTROL PERMITS

The number of agencies and municipalities submitting deer management proposals, which serve as applications for Deer Population Control Permits (DPCP's), decreased from 12 during Winter 1993-94 to 10 for Winter 1994-95 (Table 3). Although the Village of Riverwoods implemented deer control for the first time during the latter winter, the decline in agencies conducting deer removals was due to discontinuation of programs at O'Hare International Airport (number of deer present pose minimal threat to human safety), the Village of Bannockburn (removals will be conducted every other year), and the Lake Carroll Property Owner's Association (due to program opposition). The number of sites (e.g., municipalities, individual forest preserves, homeowner associations, etc.) of deer herd control remained the same as the previous winter (N = 26) even though some new sites were added and others dropped during Winter 1994-95. The number of municipalities conducting deer control programs remained at 4.

The number of deer permitted (for removal) was lower for the Winter 1994-95 than the previous winter (Chart 2); this is to be expected as many of the removal programs have entered the maintenance or control phase (i.e., have passed the herd reduction phase). Although late winter 1994-95 was very mild which may have hindered some deer removal efforts, the removal rate (percentage of deer permitted that were actually collected) was consistent with the previous 2 winters (i.e., approximately 70%).

Sharpshooting remained the primary means of deer removal. However, the forest preserve districts of Cook and DuPage counties used rocket nets for research purposes (to tag and radio-collar deer to determine movements and survival) and/or in conjunction with penetrating captive bolts as a herd reduction tool in areas not open to sharpshooting or to augment sharpshooting. Collapsible Clover traps were used for the first time in a municipality; trapped deer were euthanized using a penetrating captive bolt. Use of this technique allowed the safe, although passive, removal of deer from specific private properties within municipalities where sharpshooting and/or rocket-netting are not possible. Although use of Clover traps as a lethal deer removal method was unsuccessfully contested in court in the Minneapolis-St. Paul area last year, no organized opposition to the use of this technique locally has occurred. Again all removal programs were completed without incident of compromising human safety.

"Opposition" to lethal culling programs continued during Winter 1994-95 and has become increasingly organized and focused although no court cases were filed. Opponents were capable of promoting "controversies" in Cook, DuPage, and Lake counties as well as the City of Highland Park. Photograph and video documentation of alleged "wrongdoings" by forest preserve personnel and of fraudulent claims of deer damage by homeowners promoting deer control was used very successfully to hinder ongoing control programs and stop proposed programs, respectively. Deer control opponents continue to capitalize on the presence of "receptive ears" among the media; newspaper articles on the "deer issue" were so numerous that collecting copies of all was not possible. These same opponents have also become adept at quickly producing fairly high quality "educational"

pamphlets and packets in apparent attempts to outcompete the Department, local natural resource agencies, and municipalities in disseminating information. The still effective focus of their efforts is to sway the local politicians, members of the governing political entity which has the authority to "pull the plug" on a deer control program or techniques being used, with sensational claims and questionable "expert" testimony.

The Winter 1994-95 was unique in that "opposition" to current programs and removal techniques originated from another group: a newly organized group of bowhunters. These "controversies" are discussed briefly below:

- 1) Forest Preserve District of DuPage County (FPDDC): a seemingly ever-fascillating forest preserve commission/county board continually jeopardizes deer control efforts on FPDDC properties. Some commission /board members seem more willing to listen to the "misinformation" from deer program opponents than the FPD professional staff. It is quite apparent that the old adage, "politics is the name of the game", applies in this situation.

In January 1995, members of a local animal rights group planted a video camera focused on a bait/rocket-netting site in the Greene Valley Forest Preserve in southern DuPage County. During one evening, opponents were able to obtain video footage of a least one capture (of 2 adult bucks with antlers) and partially observe a second capture attempt (the 4 netted deer were not visible). Although the footage was of poor quality due to low light conditions, an edited/abbreviated version, accompanied by some very sensational narration provided by program opponents, was shown to the commission/board. The opponents focused on the fact that one of the adult bucks somersaulted backwards during the first capture as an example of the stress and trauma rocket-netting causes animals. These opponents also claimed that during the second capture, based on the sounds/noises recorded by the camera since the handling of deer was not visible, deer were captive-bolted multiple times, and one deer may have had it's throat cut. Although a much less than factual presentation, the commission/board voted by a narrow margin to suspend the use of this technique. This position was later clarified to state that rocket-netting of deer followed by euthanization via captive bolt would not be used. Rocket-netting to tag or collar deer for research purposes and captive-bolting injured animals or animals not killed immediately by sharpshooters were acceptable.

Secondly, a newly-formed group of archery hunters petitioned the FPD commission/county board to suspend current techniques for controlling deer numbers because they were "mismanagement" and "despicicable" and to allow this particular group to control deer numbers on all preserves currently undergoing deer management via archery hunting. The bowhunters collected numerous signatures on a petition, conducted 2 "clean-up" days (i.e., picked up trash at Waterfall Glen Forest Preserve), and enlisted the assistance of Ted Nugent to build support for their proposal. Again, this prompted considerable media attention as a

new faction or side was added to the deer debate. Ultimately, the commission/board voted overwhelmingly to continue using sharpshooters.

- 2) Forest Preserve District of Cook County (FPDCC): not surprisingly, after the DuPage County board suspended the combined use of rocket nets and penetrating captive bolts the deer control opponents turned their attention to FPDCC. The opponents were allowed to address the issue of deer control and current techniques before the Cook County board/forest preserve commission only after several attempts. A committee was appointed to review the issue of deer control and specifically the use of rocket nets and captive bolts. A public hearing was scheduled for 2 August 1995 to hear testimony of professionals and comments from the public; timing of the ultimate decision on the issue was unknown at the time of this summary.
- 3) Lake County Forest Preserve District (LCFPD): historically, aerial counts of deer in NE Illinois are restricted by the presence of adequate snow cover. This has meant that during some winters baiting and herd reduction activities have begun before aerial counts could be conducted. Population modelling and field observations have provided adequate information on deer numbers to authorize herd control activities to start prior to aerial counts. However, during the Winter 1994-95 one of the local animal rights groups sensationalized the fact that LCFPD had placed salt blocks and non-functioning automatic feeders at potential sharpshooting sites prior to aerial counts. These control program opponents, 2 of whom sit on the forest preserve district's Wildlife Advisory Committee, promptly provided this "story" and photographs of the bait stations to the media. They claimed that LCFPD was baiting sites on 3 preserves to draw deer to these sites and thereby inflate aerial counts so more deer could be shot. In reality, bait sites had been established on only 2 of the preserves. It is unknown whether it was the media attention and/or the vocal protests of the local opposition leaders that influenced the decision of the LCFPD administrators and county board members; they were definitely not receptive to information provided by the LCFPD professional staff nor the Department contradicting the claims of the opponents. Regardless of the reasoning, 2 of the LCFPD professional staff were suspended for 1 day, and all salt blocks and feeders were removed prior to 2 additional aerial counts.

This further restriction on the timing of aerial counts relative to baiting of potential shooting sites was additive to other limitations imposed upon the LCFPD biologists/professional staff by county administrators in apparent attempts to appease the leaders of the local deer control opponents. To date, the LCFPD biologist responsible for the deer program is not allowed to serve as an observer or counter during aerial surveys. Additionally, deer observed outside the boundaries of the preserves are not included in setting herd reduction goals. Although the LCFPD deer control program was proactively initiated in 1989 at Ryerson Conservation Area prior to the formation of a distinct browseline, the current

restrictions imposed by county administrators leads to the questioning of their sincerity in protecting these remnant natural areas for future generations. The current approach of determining deer removal objectives based solely on the number of animals inside preserve boundaries on the day(s) of the aerial surveys has resulted in minimal herd reductions which probably do not offset herd growth.

Although performed by non-biologists, the results of the multiple aerial counts of Ryerson Conservation Area, MacArthur Woods, and Wright/Lloyd's Woods preserves during Winter 1994-95 may indicate a lack of site fidelity to small (i.e., 505 to 660 acres) preserves by deer during the winter. Two aerial counts, flown 7 days apart in late January 1995, yielded remarkable differences. Counts during the second flight were considerably higher; this disparity ranged from 2 to 24 more deer on individual forest preserves and from 6 to 12 more deer on neighboring property (which range from 173 to 575 acres in size). This added to the confusion in setting herd reduction goals, and ultimately an average of the 2 January flights was used to set removal goals. This resulted in 22 deer being collected from Ryerson and no removals on the other 2 preserves.

Similarly, multiple aerial counts in the adjacent (to Ryerson C.A.) Village of Riverwoods may indicate considerable movements of deer between forest preserves and adjacent communities during the winter. Although the counts in Riverwoods were conducted by an experienced pilot and the Village forester, the second observer/counter was usually a novice resulting in discrepancies between observers in total number of deer counted. In January 1994, 62 deer were counted within the Village. In December 1994, only 32 were counted in the 4.5 square mile area of the Village; however, during the same flight 24 deer were counted on Ryerson C.A. and 15 on a nearby Cook County preserve. Conditions during the December count were less than ideal in that a heavy wet snow clung to trees and branches, but the Village forester felt confident with observations. A late afternoon count during late January 1995 yielded, according to the front seat observer's tally, 68 deer within the Village boundaries and 107 on adjacent Lake County and Cook County preserves; the rear seat observer, a Village trustee, counted only 107 deer during the entire survey. The flights conducted by LCFPD and the Village of Riverwoods exemplify the fact that using aerial counts as the sole means of setting annual herd reduction goals can be confounded by multiple counts, especially when performed under marginal counting conditions and/or performed by inexperienced personnel.

- 4) City of Highland Park: this 12.5 mile² municipality in the southeast most corner of Lake County entered the deer control "debate" during the summer-fall 1994. The Urban Deer Project began fielding deer damage complaint calls from individual homeowners in Highland Park in 1989, and these occasional calls continued until 1994. Most involved larger (i.e., > 1 acre) wooded properties near other open spaces/natural areas (e.g., wooded lakefront ravines, city parks, etc.). Following the typical sequence of events, characteristic of the north shore municipalities,

these individual residents began complaining to the city administrators about the need for deer control efforts. Responsibility for addressing deer damage complaint was passed to the police department, and one officer was asked to investigate damage complaints. The Urban Deer Project assisted in several site-evaluations conducted by the local police department. Since the only option, allowed by the city, for landowners was repellents or exclusion (as long as fences were less than 6 feet high); frustrated landowners began to exert pressure upon city administrators via political channels (via city trustees). This resulted in the deputy chief of police contacting the Urban Deer Project in spring-summer 1993 to seriously determine the types of special deer removal permits issued by the Department, application requirements, and restrictions/regulations of each. Although some city trustees pushed for deer control, the city took no action except to contract an aerial count of deer during January 1994; 87 deer were counted during this survey.

In 1994, the City of Highland Park's 5-member environmental commission (EC) was tasked to review deer damage abatement and population control alternatives and to provide recommendations to the city council, even though the EC had reportedly been reviewing the subject since 1992. The Urban Deer Project was called upon to provide information and to meet with the commission. A joint EC/city council public hearing was held in August 1994 to hear public comments; the Urban Deer Project gave a presentation on urban deer (history, damage abatement, population control, etc.) and answered questions from the audience and EC and city council members. The EC prepared a 4-question postcard questionnaire which was distributed via the September 1994 issue of the city's newsletter; only 549 responses (in a city of >30,000 residents) were received. Based on the results of this questionnaire and their review of alternatives, the EC recommended to the city council that thinning of the deer herd by selective culling be initiated and that deer population levels be maintained via fertility control when a viable technique became available. At a meeting in October 1994, the city council voted 4-2 (one trustee was absent) to implement the EC's recommendations and to seek a DPCP from the Department. However, in December the council (all 7 members present) reversed its October decision by a vote of 4-3, and a 60-day moratorium on lethal deer control was imposed while alternatives were reviewed. Some media sources touted this as a victory for the "animal-rightist" who had been able to solicit considerable media coverage and to collect over 600 signatures on a petition opposing sharpshooting in Highland Park. One has to question whether it was this media attention and vocal protests of deer control opponents that swayed the city council or whether "political wrangling" played a larger role. Conveniently, the pending (in February 1995) mayoral election pitted the incumbent (= pro deer control) against one of the councilmen (= anti lethal control). In this climate, there was no doubt that the deer control issue would become a polarized political circus.

To add further confusion to this issue, an aerial count in January 1995 yielded only 65 deer in Highland Park, 22 fewer than counted the previous year. Although the

1995 count was performed by different observers than the previous year and was conducted in late afternoon under poor light conditions (heavy shadows in ravines and woods and sun glare on the plexiglass windows of the helicopter), this count was treated as absolute. As a result, the deer control opponents were quick to point out that there was no need to reduce deer numbers in light of an apparently decreasing herd. Additionally, the Park District Board of Highland Park voted (apparently without seeking input of the park district staff) against any shooting of deer on park district property. The latter agency also co-sponsored (with the local opposition group) a panel discussion to educate the Highland Park public in February; panel members included Dr. Allen Rutberg (HSUS), Dr. Thomas Eveland, a local landscape contractor, an epidemiologist, and a psychiatrist. In the absence of a dissenting opinion on the panel, the meeting was described as being very orderly and unemotional. The meeting was videotaped and aired repeatedly by a local cable TV station; the video has also been made available to any who even remotely wants to view it (e.g., it has been sent to local politicians, other municipalities and probably the media). Also in February, the city council heard from Dr. Elizabeth Frank (Milwaukee County Zoo) on the possibility of mechanical sterilization and from a representative of the Chicago Botanic Gardens on nonlethal deer damage abatement techniques. The Urban Deer Project was invited, and had agreed, to give another presentation, but after being told a short time before the scheduled meeting that the presentation would not be allowed by the city council because it might further "polarize the issue" the decision was made not to attend.

At the latter council meeting, one of the council members apparently held up a copy of the "controversial" "rocket-netting in DuPage County" video and described the technique as "heinous". This indicated a failure on the part of the Urban Deer Project to educate the local politicians as the elected officials were receiving their education and information from local and national animal rights groups. The city council ultimately voted to appoint a task force to again review all alternatives over the next 6 months; this review will apparently end in September 1995.

However, not all deer programs, implemented last winter, were controversial. The Village of Riverwoods (approximately 4.5 square miles, in south-central Lake County) implemented deer control for the first time during winter 1994-95. Riverwoods' control program was similar to the programs implemented by other municipalities in that the emphasis is not population control per se as much as it is to control deer damage to private properties. Minimizing concerns for human safety due to deer-vehicle accidents was also listed as a secondary (due to low numbers of DVA's) objective of these deer control programs. Additionally, since most private properties are heavily wooded, damage to native vegetation was of concern.

Village administrators conducted a village-wide mail survey of residents to determine the extent and nature of deer-related "problems" and to assess public opinion on

sharpshooting to control deer numbers. Although somewhat less than conclusive, 43% (394 out of 925) of the households responded to the survey: 72% of the respondents reported property damage caused by deer, and 58% approved of sharpshooting. The Village also hosted several public meetings on the deer control subject; the Urban Deer Project gave a presentation on deer damage abatement and population control at one of these meetings. The Village Board of Trustees were divided on the issue when it was brought to a vote, but the deciding/tie-breaking vote to initiate a deer control program was cast by the mayor. Considering the anti-lethal removal sentiments expressed by some Riverwoods residents, administrators and trustees when LCFPD proposed sharpshooting at Ryerson C.A. in 1989, implementation of deer control in Riverwoods indicates that public opinion seems to change as more people are directly affected by deer.

Over time, certain trends have become discernible in whether a municipality considering implementation of lethal deer control will be successful or face considerable opposition. Smaller villages, and even some larger cities, with deer (and associated damage) distributed throughout have initiated deer control relatively unscathed. Municipalities with more isolated deer "hotspots" or with deer habitat mostly on the periphery of municipal boundaries (e.g., Highland Park) face a greater challenge. In the latter cases, only a very small percentage of the residents may be affected, or even see deer in their yards, and promote deer damage control. The predictable opposition quickly escalates the problem of deer damage control into a city-wide issue and can easily obtain hundreds of signatures (of residents who may not even see deer near their homes or apartments) opposing lethal control of deer numbers. HSUS representatives have typically simplified the question facing municipal administrators to one of learning to tolerate all of the deer and using nonlethal deterrents versus total eradication of all deer. These attempts to "muddy the waters" by control program opponents generally expand to include: 1) bringing in numerous outside "experts" (preferably with "Doctor" before their name) who claim that the municipality has not reached biological carrying capacity for deer and/or there are a myriad of other viable alternatives currently available, 2) claiming that those residents complaining of deer damage are not being truthful and/or have not tried all available repellents or forms of fencing first, 3) insisting that the reported deer damage has not been documented by the municipal staff or the Department, 4) that residents should be allowed to erect 10 foot fences or electric fences around their property, 5) that killing of deer will increase reproductive rates among the survivors and/or create a sink into which other deer will pour, or 5) just simply that deer damage of ornamental plantings and a few deer-vehicle accidents do not merit killing deer. Variable or decreasing aerial counts, although logically and biologically explainable, add more confusion for local municipal decision makers to contend with.

In Highland Park, deer habitat is mostly present on the edges of the city, and deer can move freely across municipal boundaries into neighboring municipalities and open/natural areas.

Appendix A

REGIONAL DEER REMOVAL PERMIT/KILL REPORT -- 1994 1 JANUARY through DECEMBER 31

REGION 1:	DEER ALLOWED	DEER TAKEN	PERMITS ISSUED	PERMITS RETURNED
Boone	20	18	2	2
Carroll	40	7	4	4
DeKalb	19	0	3	3
Fulton	3	2	1	1
Henderson	3	0	2	2
Henry	5	0	1	1
LaSalle	27	8	4	4
Lee	7	2	1	1
Ogle	31	15	4	4
Stephenson	10	4	2	2
Warren	5	0	1	1
Winnebago	8	3	1	1
Sub-total	178	59	26	26
REGION 2:				
Cook/Dupage	6	4	1	1
DuPage	10	2	1	1
Grundy	82	37	11	10
Kane	55	17	10	10
Kendall	2	0	1	1
Lake	12	3	2	2
McHenry	91	9	10	9
Will	16	12	3	3
Sub-total	268	84	38	37
REGION 3:				
Champaign	48	26	10	10
DeWitt	4	2	1	1
Macon	2	0	1	1
McLean	16	10	4	4
Vermilion	32	17	5	5

Appendix B Continued.

REGION 3:	DEER ALLOWED	DEER TAKEN	PERMITS ISSUED	PERMITS RETURNED
Sub-total	102	55	21	21

REGION 4:

Adams	15	4	4	4
Calhoun	9	4	4	3
Cass	1	1	1	1
Christian	4	0	2	2
Clinton	3	1	1	1
Hancock	1	1	1	1
Jersey	6	0	2	2
Macoupin	10	6	5	5
Madison	5	0	1	1
Menard	2	0	1	1
Montgomery	10	6	3	3
Pike	77	45	22	20
Randolph	2	2	1	1
Sangamon	4	0	2	2
Schuyler	31	24	7	7
St. Clair	3	3	1	1
Sub-total	183	97	58	55

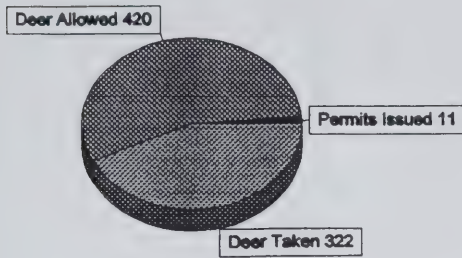
REGION 5:

Crawford	2	0	1	1
Fayette	5	0	2	2
Franklin	12	7	3	3
Jackson	79	61	10	8
Jasper	4	0	1	1
Jefferson	10	3	7	7
Johnson	52	32	10	9
Massac	16	10	3	2
Massac/Pope	10	10	1	1

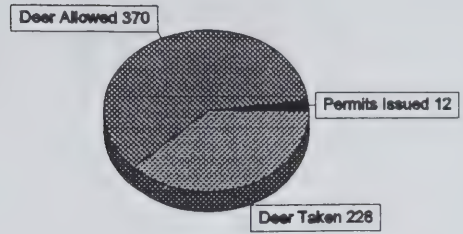
Appendix B. Continued.

REGION 5:	DEER ALLOWED	DEER TAKEN	PERMITS ISSUED	PERMITS RETURNED
Perry	11	8	3	3
Pope	11	10	3	3
Pulaski/Massac	5	0	1	0
Saline	8	8	3	3
Union	55	19	9	8
Union/Jackson	5	5	1	1
Union/Johnson	5	1	1	1
White	2	2	1	1
Williamson	5	5	1	1
Sub-total	272	181	57	55
STATE TOTALS	1,034	474	205	194

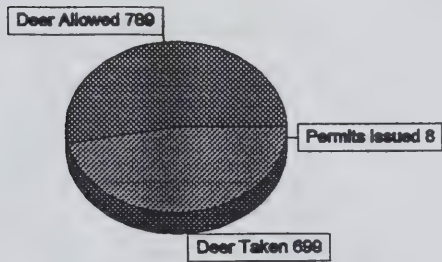
Cook County – 1994



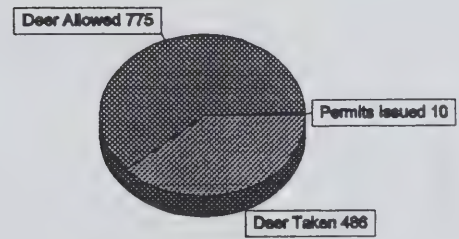
Cook County – 1995



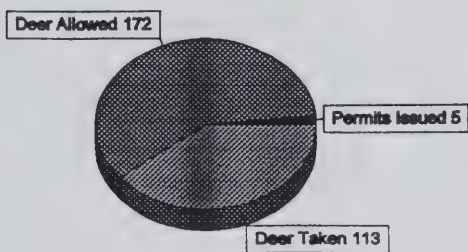
DuPage County – 1994



DuPage County – 1995



Lake County – 1994



Lake County – 1995

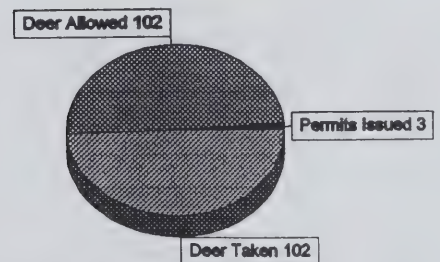


Table 3. Deer population reduction and control programs in northern Illinois authorized via DPCP. Number of deer permitted for removals is followed by the actual number collected in parentheses.

Site	Size (ha)	1990-91	1991-92	1992-93	1993-94	1994-95
Northeastern Illinois						
Chicago Botanic Gardens*	121	30 (24)	30 (3)	20 (12)	20 (2)	10 (3)
City of Lake Forest	2590+		20 (11) ^a	70 (33)	72 (69)	60 (60)
FPD of Cook Co.						
a) Bennis Woods	514				30 (30)	30 (30)
b) Busse Woods	1508	30 (16)	40 (40)	40 (21)	50 (50)	40 (40)
c) Camp Sagawan	22		30 (21)	20 (4)		
d) Crabtree NC	669			30 (10)		30 (25) ^b
e) Glenwood/Zanders	1699			30 (0)	30 (29)	30 (8)
f) Palos (West) Div.	1178			45 (44)	50 (50)	50 (50)
g) River Trails NC	239	30 (6)	40 (23)	40 (23)	30 (30)	30 (30)
h) Skokie Division	449			15 (12) ^b	30 (22)	30 (12) ^b
i) Somme/Chipilly	297			30 (10)	30 (23)	30 (3)
j) Swallow Cliff Wds.	796					30 (0)
FPD of DuPage Co.						
a) Belleau Woods	29					15 (3)
b) Fischer Woods	45				8 (0)	
c) Fullersburg Woods	85				15 (4)	15 (5)
d) Greene Valley	570					90 (47)
e) Lyman Woods	37				8 (5)	5 (2)

cont.

Table 3. Continued.

Site	Size (ha)	1990-91	1991-92	1992-93	1993-94	1994-95
f) Meacham Grove	93				22 (12)	40 (3)
g) Northeast Complex	96				21 (12)	55 (16)
h) Waterfall Glen & Wood Ridge	1094			400 (253)	610 (579)	300 (183)
i) W. Chicago Prairie	122				35 (30)	30 (21)
j) Western Complex	1104					165 (151)
Lake Co. FPD						
a) Lloyd & Wright Wds.	254			18 (18)	25 (15)	
b) MacArthur Woods	204			42 (25)	15 (12)	25 (0)d
c) Ryerson Cons. Area	223	28 (28)c	19 (19)	12 (12)	20 (0)d	22 (22)
Morton Arboretum	607	45 (36)	35 (25)	55 (43)	70 (57)	60 (55)
O'Hare Airport	3238			30 (0)d	100 (59)	
The Grove NHL, Glenview Park District	35		30 (13)		20 (9)	30 (17)
Lake Carroll POA	2200			290 (290)	313 (190)	
Village of Bannockburn	518+				30 (29)	

cont.

Table 3. Continued.

Site	Size (ha)	1990-91	1991-92	1992-93	1993-94	1994-95
Village of Glencoe	997				30 (18)	30 (10)
Village of Riverwoods	1152					20 (20)
Northwestern Illinois						
Galena Territory Assc.	2720	50 (34)	600 (600)	300 (230)	200 (50)	150 (150)
Lake Carroll POA	2200			290 (290)	313 (190)	
Total # of programs/sites		6	10	18	26	26
Total # of deer permitted		213	886	1,460	1,894	1,397
Total # of deer collected		144	780	1,027	1,374	966
Lbs. of venison donated		?	>28,584	39,387	49,359	36,226

FPD=Forest Preserve District; a=Removal program initially started on a 40ha property owned by Lake Forest Open Lands Association; b=Some deer collected under concurrent Scientific Collecting Permit; c=Included attempts to live-capture and translocate; d=DPCP issued but not used by agency.

